

THE MARITIME ACTIVITIES OF THE ANCIENT TAMILS AND INDUS VALLEY CIVILIZATION

K.V. Ramakrishna Rao

Introduction : The Maritime activities of the ancient Tamils have literary evidences in Tolkappiyam, the ancient extant Tamil work and the Sangam literature datable to c.1000 BCE and 500 BCE respectively. However, the seafaring activities of the people of IVC is dated to c.3,500 BCE to the peak period 2250 to 1950 BCE. The recent Sembiyan Kandiyur Neolithic finding has also been dated to c. 1,500 BCE, where historians have not recognized any "State formation" in the ancient Tamizhagam. Again archaeologists assert that Neolithic culture in Tamil Nadu is datable to 2,800 B.C. to 500 B.C., and megalithic culture from 500 B.C. to 100 C.E.

Even the post - Sangam Imperunkappiyangal have been glorifying the seafaring merchants and trading communities. The trend continued with the Pallavas and the Cholas, till the Arabs started gaining control in the west, China in the east and ultimately European dominance started in India itself. However, the presence of Pallava impact SEA countries and even in Maldieves has not been studied properly. The books published on the shipbuilding technology based on manuscripts do not give details as one expect, as the editor or commentator obviously do not deal with technical details. Of late, even the over-sea expedition of the Cholas has been questioned suggesting that the Rajendra's maritime sojourn to SEA countries could be the excessive imagination of the poet, who rendered the text for the Tanjore inscription.

Under such circumstances, the connection between the ancient Tamils and that of IVC is studied taking certain specific areas as follows :

Whether the Sangam literature can be correlated with IVC? The Western Indologists and IVC scholars based on Vedic studies tried to correlate the "Aryans" with IVC. Accordingly, Dravidologists have to consider the "Dravidians"

of the Sangam period and their literature. The Sangam poets, flourishing from c.500 BCE have not mentioned anything beyond Ganges except Himalayas in the north. As for as the north-west is concerned, their knowledge has been NIL. For them the Southern Direction had been sacred as has been revealed through certain references mentioned. The end of IVC peak period c.1950 and the start of Sangam period c.500 / 300 BCE has to be linked and the gap explained. This has been the main problem for Indian history also. Therefore, for direct correlation, correspondence and connection, more material evidences have to be produced for the acceptability of historians. One among the issues is taken up and attempt has been made to correlate as follows.

The Maritime Capabilities of the Ancient Tamils : to correlate the archaeological evidences of the ancient Tamils with that of the people of IVC, the literary evidences are considered, as the existing archaeological evidences do not go beyond c.2,000 BCE and the historic period c.500 BCE. Well established port, port administration and taxation on the metirial are mentioned. (புறநானூறு: 126 : 13-16)

The sky high building had enclosures at the top, where lights were lit during the night. The glowing light was controlled by a stick.

விண்பொர நிவந்த வேயா மாடத்
திரவின் மாட்டிய விலங்குசுடர் ஞெகிழ்
உரவுநீ ரமுவத் தொடுகலங்கரை (பெரும்பாணாற்றுப்படை. 348-351)

Shipwrecks are succinctly portrayed by the Sangam poets as

கரைகாணாப் பெளவத்துக் கலம் சிதைந்து ஆழ்பவன்
திரைதரப் புணைபெற்றுத் தீதின்றி உய்ந்தாங்கு (கலித்தொகை. 132:6-7) =

Niggan, a trained ship repairing expert, also experienced sailor knowing the directions were existed. Ships were anchored with ropes tied to anchored.

மாக்கடற் பெருங்கலங் காலின் மாறுபட்
டாக்கிய கயிறிரிந் டோடி யங்கணும்
போக்ன பொருவன போன்று.... (சீவக சிந்தாமணி 2231)

Naval fleet is mentioned in 1776, 1801, 2597, etc. and there have been abundant references about asterism, planetary motion etc. Thus, from the above, the shipbuilding techniques of the ancient Tamils cannot be doubted.

Coming to the archaeological evidences, NIO³ and Tamil University⁴ researching scholars have reported certain stone anchore findings in the coastal areas of South India. However, cautiously, they report about the dating "from the literary and archaeological evidences it can be safely presumed that the usage of stone anchors would have prevailed from the 3rd century BCE...". Therefore, unless material evidences are produced, the above literary evidences cannot be correlated and substantiated.

Shipping and shipbuilding technology of the Ancient Tamils : The reference about the subject matter as found in the Sangam literature is not repeated, as they have already been pointed out by many scholars in various contexts one way or the other. Only the ship building technology, which has not been dealt with so far and which doubted by the modern scholarship, is discussed here:

Civaga Cintamani (verse no. 882) mentions about the existence of "books on the knowledge of Oceans", which is very significant in the context:

வாண் மின்னு வண்கை வடிநூற் கடற்கேள்வி மைந்தர்
தான்மின்னு வீங்கு கழலான்றனைச் சுழமற்றப்
பூண்மின்னு மார்பன் பொலிந்தாங்கிருந்தான் விசும்பிற்
கோன்மின்னு மீன்குழ் குளிர்மாமதித் தோற்றமொத்ததே.

The sailors of all categories - traders, businessmen, should be warriors and also good navigators with the knowledge of shipping, astronomy, geography and oceanography were prevailed.

The mention of availability of books on the knowledge of Oceans is significant.

"The Books on the Knowledge of Oceans" covers all aspects of Ships, shipping etc.,

That the sailors should be capable of handling swords and such books is also significant considering the dangers involved in ocean-trade, visiting many countries, the nature of people dealt with in trading etc.

Interestingly, both the Science of Ocean and the Sky are mentioned together in the same context figuratively.

Kappal/Navai Sattiram - Science and Technology of Ships and Shipping: Indians used to write books on Palm-leaves, particularly, in South India. They

used different scripts to Sanskrit and Tamil languages on various subjects. Most of the original Sanskrit books are missing either destroyed or taken away by the Mohammedans for study and also by European missionaries. As the demand for books increased with the exigencies, more books could have been produced engaging the scribes. An expression, "Tiruppugira Pusthakam" found in "Kappal Sttiram" (Science and Technology of Ships and Shipping) proves that copies of books were made from the translations and as well as originals. The expressions "Edu Tiruppudhal" (turning the pages) and "Tiruppugira Pusthakam" (the book that is turned) convey copying a book from its original, so that the original could be preserved and the copy given away or sold. As per the directions of the Danish, in the house of Kangirayap Pillai or Kaligarayap Pillai, a Dubash, the book was dictated and a scribe had written down. The name of the book is mentioned as "Nikamasigamani", a Sanskrit name. As the last line of 8th song clearly mentions that, "Salaikathirangan sorppadi idanai tamil seythittan", it is evident that as per the directions of one Salaikathirangan, it was made into Tamil i.e, translated into Tamil from Sanskrit. As it was known that there was a work named "Nauka Sastra" in Sanskrit, that book might have been used for translation. Here, Kangriyap Pillai says that he is producing the book as per the directions of Danish in 1620 (of Salivahana Era) or 1698 of CE in his house. So the Danish tried to get the science and technology books from the Indians.

The book gives the following details.

The standard measurement (Verse.3).

The time suitable for manufacture of ocean-going vessels is given astronomically based on an earlier work, "Nigama Sigamani" (நிகம சிகாமணி, Verse.4).

The properties of ships (5).

The suitable time for navigation (6-9).

The best time for fixing of mast (13).

A Tamil king "Parasi Vendan"; when it might face with danger; when a ship may wreck and such other exigencies are mentioned (23-28). Thus, it is amply evident that the Tamils knew the ship wreckage occurred as a result of piracy. As they followed the rules and regulations of nature and sailed in the prescribed time, the wreckage due to natural disasters like tempest, cyclones, rough weather etc., must have been minimal.

Mathematics involving points / dots is mentioned (29). As it is not explained, it is not known exactly what mathematical method or mathematics involving points were used in the maritime context. But, it must have been connected with Cartography making points on the maps drawn, developed, corrected and modified. In those days, maps could have been produced only after undertaking any voyages. Ironically, such projection in navigation charts used is known as 'the Mercator,' (1512-94), who reportedly devised it. But it is evident that they must have known from Indians, as existence of such method is mentioned here.

Experts of Books without any weariness (31). It is mentioned that these details are given by the Experts of Books without any weariness implying that they exclusively engaged in such observatory and cartographic work making projections etc.

When a ship with cargo the destruction would occur (33) is mentioned.

A ship would return successfully with earned profits after selling the goods aboard (37) is mention. These two exigencies have been given in astrological interpretation, but involving astronomical observation. The Tamils must have found out the arrival of Arab and European vessels to SEA countries at a particular time, as their starting with winds from their destinations had been different from that of Indians. However, they tried to coincide with the timings of Indians with an intention to compete initially and then seize cargo by piracy realizing their law abiding nature. Moreover, the cunning Arabs and Europeans must have used Indian flags, symbols, dress etc., to cheat the Indians to complete their piracy.

Persons with two eyes and one eye are compared figuratively with Sun and Moon. Danger to cargo would come from the persons with one eye (39), as they stealthily attack other vessels without following any marine-ethics or Maritime regulations. This is clear indication that Tamils knew of the nature of pirates, who were not Indians, as they were not following the Indian ethics of not attacking the vessels of others. Incidentally, the western depiction of standard pirates have been "one-eyed"!

Interestingly, another point implied is about the persons with "Surya dhristi", "Chandra dhristi", "Raja dhristi", "Griha dhristi", "Rakka dhristi" etc. They were nothing but persons with eye-sight of Moon, Sun, king, Planets, sides etc. in other words, the ocean going ships had such experts/observers of Solar, lunar, planetary motions and time calculations. As they had to visit different countries, they had to know about the Kings of such countries, thus the experts of Kings. And

there were experts in observing directions also, as it is important in navigation. As such things could have been possible with past experience, it is evident that the experts mentioned must have had books on such subject matter.

Suddenly, the work changes from poetry to prose giving statistical details of planets, asterisms, stars etc.

Thus, the measurements for masts are given.

The measurements for anchors are given.

Measurement details of a "English ship" is given.

At the end, it is appended with "Silpa sastra" (A Manual of Sculpture) only with 13 verses.

As most of the verses have been written with defective words, language and grammar, it is evident that the Danish must have engaged poor scribes to write this work.

Many verses have been adopted or imported straight away from the following earlier works:

சரஸ்வதி அந்தாதி, சோதிடகிரகசிந்தாமணி, கணக்கதிகாரம் and நீகம சிகாமணி

However, the scribe has not acknowledged the source.

As the work has been incomplete in many aspects, it is evident that the copy has been only a part of a bigger book.

The Navai Sarittiram published in 1995 also proves the fact.

In view of the above, it is evident that before the Cholas-Pallavas period, there must have been books on astronomy, shipbuilding etc., and they must have been copied and circulated throughout India. As the Arabs / Mohammedans first and the Europeans later started wholesale collection of Indian palm-leaf books, Many important books must have still been in the archives, libraries and private collections of westerners. Therefore, absence of evidence cannot be taken as an evidence to deny the incidence happened or taken place in the past. The finding of coins of Romans, Chinese etc., and the goods of South India / ancient Tamizhagam have been found in many ancient civilizations, the maritime capabilities of the Tamils cannot be doubted.

Conclusion: In view of the above the following conclusions are drawn:

1. The Sangam literature evidences amply prove the seafaring and maritime capabilities of the ancient Tamils from c.500 BCE.
2. The scientific details as pointed out have been so interesting and the poets could not have recorded such events just out of their poetic fantasy or imagination.
3. The astronomical knowledge of the Sangam Tamil and that of IVC could not be compared and correlated, because of the chronology gap.
4. The gap between the IVC peak period c.2250-1850 BCE and the Sangam period c.500/300 BCE has to be explained historically with evidences.
5. The literary evidences pointed for the maritime activities, shipbuilding, repair, shipping technology etc., should correlated with the archeological evidences.
6. The dating of stone anchors has been done on relative method, as has pointed out and therefore, it should be correlated with other method, as otherwise, the literary evidences could not go beyond c.500 BCE.
7. The dating of Sri Lankan Brahmi before that of Tamilnadu, the existence of "Pallava inscriptions" of SEA countries dating before Indian inscriptions are debatable points.

References

1. T. Chandrasekharan (Gen.Ed.) *Kappal Sattiram*, Madras Government Oriental Series, Government Oriental Manuscripts Library, Madras, 1950. *Kappal Sattiram* published in 1995 gives no new details but for some generalizations.
2. W. Spencer, *The Politics of Expansion, the Chola conquest of Sri Lanka and Sri Vijaya*, New Era Publications, Madras, 1983. Sinnappah Arasaratnam, *Maritime India in the Seventeenth Century*, Oxford University Press, New Delhi, 1994, see under chapter. 9 "Shipping and sea faring, pp.246-264.
Though, he concerns about the 17th century, his remarks on shipbuilding technology of the Indians/Tamils have bearing on the subject matter.
3. A.S. Gaur et al.,
4. N. Athiyaman and P. Jayakumar, Ancient anchors off Tamilnadu coast and ship tonnage analysis, *Current Science*, Vol.9, May 10, 2004, pp.1261-1267.
5. S. Kalyanaraman, www.hindunet.org/saraswati/maritime/maritime01.htm
6. David Heppell, *The chank shell industry in modern India*, see in the following site: <http://princelystates.com/ArchivedFeatures/fa-03-03a.shtml>